**BIOLOGY SCHEMES OF WORK FORM 4**

**TERM 2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WK** | **LSN** | **TOPIC** | **SUB-TOPIC** | **OBJECTIVES** | **T/L ACTIVITIES** | **T/L AIDS** | **REFERENCE** | **REM** |
| 1 | **Opening of School** | | | | | | | |
| 2 | 1 | EVOLUTION | Meaning of evolution. Theories of origin of life. | By the end of the lesson, the learner should be able to:   Define evolution. Explain the theories of life. | Brain storming; Probing questions; Q/A on creation theory; Exposition of chemical theory. | text book | KLB BK IV. PP 49-51 |  |
| 2 | EVOLUTION | Evidence for organic evolution. | By the end of the lesson, the learner should be able to:  Cite evidence for organic evolution. | Brain storming; Probing questions; Exposition; Discussion. | text book | KLB BK IV. PP 51-59 |  |
| 3 | EVOLUTION | Evidence for organic evolution. | By the end of the lesson, the learner should be able to:  Cite evidence for organic evolution. | Brain storming; Probing questions; Exposition; Discussion. | text book | KLB BK IV. PP 51-59 |  |
| 4 | EVOLUTION | Comparative anatomy and homologous structures. | By the end of the lesson, the learner should be able to:  Define divergent evolution. Give examples of homologous structures. | Examine forelimbs of vertebrates; Discuss adaptations and use of the limbs. | Forelimbs of vertebrates. | KLB BK IV. PP 59-63 |  |
| 5 | EVOLUTION | Comparative anatomy and homologous structures. | By the end of the lesson, the learner should be able to:  Define divergent evolution. Give examples of homologous structures. | Examine forelimbs of vertebrates; Discuss adaptations and use of the limbs. | Forelimbs of vertebrates. | KLB BK IV. PP 59-63 |  |
| 3 | 1 | EVOLUTION | Comparative anatomy and homologous structures. (contd) | By the end of the lesson, the learner should be able to:  Define divergent evolution. Give examples of homologous structures. | Examine forelimbs of vertebrates; Discuss adaptations and use of the limbs. | Forelimbs of vertebrates. | KLB BK IV. PP 59-63 |  |
| 2 | EVOLUTION | Comparative anatomy and homologous structures. (contd) | By the end of the lesson, the learner should be able to:  Define divergent evolution. Give examples of homologous structures. | Examine forelimbs of vertebrates; Discuss adaptations and use of the limbs. | Forelimbs of vertebrates. | KLB BK IV. PP 59-63 |  |
| 3 | EVOLUTION | Convergent evolution and analogous structures. | By the end of the lesson, the learner should be able to:  Define convergent evolution. Give examples of analogous structures. Give examples of vestigial structures. | Examine wings of insects; wings of birds / bat. Discuss observations. | Wings of insects, wings of birds / bat. | KLB BK IV. PP 63-64 |  |
| 4 | EVOLUTION | Convergent evolution and analogous structures.(contd) | By the end of the lesson, the learner should be able to:  Define convergent evolution. Give examples of analogous structures. Give examples of vestigial structures. | Examine wings of insects; wings of birds / bat. Discuss observations. | Wings of insects, wings of birds / bat. | KLB BK IV. PP 63-64 |  |
| 5 | EVOLUTION | Convergent evolution and analogous structures.(contd) | By the end of the lesson, the learner should be able to:  Define convergent evolution. Give examples of analogous structures. Give examples of vestigial structures. | Examine wings of insects; wings of birds / bat. Discuss observations. | Wings of insects, wings of birds / bat. | KLB BK IV. PP 63-64 |  |
| 4 | 1 | EVOLUTION | Larmack?s theory of evolution. | By the end of the lesson, the learner should be able to:  Explain Larmack?s theory of evolution. | Expositions and explanations. | text book | KLB BK IV. P 67 |  |
| 2 | EVOLUTION | Darwin?s theory of natural selection. | By the end of the lesson, the learner should be able to:  Explain Darwin?s theory of natural selection. Cite examples of natural selection in action. | Expositions and explanations; Probing questions; Topic review. | text book | KLB BK IV. PP 67-72 |  |
| 3 | EVOLUTION | Darwin?s theory of natural selection. | By the end of the lesson, the learner should be able to:  Explain Darwin?s theory of natural selection. Cite examples of natural selection in action. | Expositions and explanations; Probing questions; Topic review. | text book | KLB BK IV. PP 67-72 |  |
| 4 | RECEPTION, RESPONSE & CO-ORDINATION | Meaning of stimulus, response and irritability. Tactic responses. | By the end of the lesson, the learner should be able to:      Define of stimulus, response and irritability. Explain the need for sensitivity and response. Identify types of tactics responses. | Brain storming; Exposition; Group experiments-chemotaxis in termites; Discussion. | Brad crumbs, termites, dry sand, moth balls. | KLB BK IV. PP 73-74 |  |
| 5 | RECEPTION, RESPONSE & CO-ORDINATION | Meaning of stimulus, response and irritability. Tactic responses. | By the end of the lesson, the learner should be able to:      Define of stimulus, response and irritability. Explain the need for sensitivity and response. Identify types of tactics responses. | Brain storming; Exposition; Group experiments-chemotaxis in termites; Discussion. | Brad crumbs, termites, dry sand, moth balls. | KLB BK IV. PP 73-74 |  |
| 5 | 1 | RECEPTION, RESPONSE & CO-ORDINATION | Tropism and types of tropism. | By the end of the lesson, the learner should be able to:  Identify types of tropism. State differences between tropisms and taxes. | Examine previous plant set ?ups on response to light, gravity; Probing questions and discussion. | Seedlings, klinostat, corked beaker. | KLB BK IV. PP 74-78 |  |
| 2 | RECEPTION, RESPONSE & CO-ORDINATION | Tropism and types of tropism. | By the end of the lesson, the learner should be able to:  Identify types of tropism. State differences between tropisms and taxes. | Examine previous plant set ?ups on response to light, gravity; Probing questions and discussion. | Seedlings, klinostat, corked beaker. | KLB BK IV. PP 74-78 |  |
| 3 | RECEPTION, RESPONSE & CO-ORDINATION | Nastic responses. | By the end of the lesson, the learner should be able to:  Identify types of nastic responses | Q/A and discussion. | text book | KLB BK IV. PP 78-80 |  |
| 4 | RECEPTION, RESPONSE & CO-ORDINATION | Role of auxins in tropisms. | By the end of the lesson, the learner should be able to:  Explain the role of auxins in tropisms. | Examine previous plant set ?ups on response to light, gravity; contact; Probing questions and discussion. | text book | KLB BK IV. PP 80-83 |  |
| 5 | RECEPTION, RESPONSE & CO-ORDINATION | Role of auxins in tropisms. | By the end of the lesson, the learner should be able to:  Explain the role of auxins in tropisms. | Examine previous plant set ?ups on response to light, gravity; contact; Probing questions and discussion. | text book | KLB BK IV. PP 80-83 |  |
| 6 | 1 | RECEPTION, RESPONSE & CO-ORDINATION | Response and Co-ordination in animals. The nervous system. | By the end of the lesson, the learner should be able to:      State components of the nervous system. Describe the structure of nerve cells. | Descriptive and expository approaches. | Illustrative diagrams. | KLB BK IV. PP 84-85 |  |
| 2 | RECEPTION, RESPONSE & CO-ORDINATION | Response and Co-ordination in animals. The nervous system. | By the end of the lesson, the learner should be able to:      State components of the nervous system. Describe the structure of nerve cells. | Descriptive and expository approaches. | Illustrative diagrams. | KLB BK IV. PP 84-85 |  |
| 3 | RECEPTION, RESPONSE & CO-ORDINATION | Response and Co-ordination in animals. The nervous system. | By the end of the lesson, the learner should be able to:      State components of the nervous system. Describe the structure of nerve cells. | Descriptive and expository approaches. | Illustrative diagrams. | KLB BK IV. PP 84-85 |  |
| 4 | RECEPTION, RESPONSE & CO-ORDINATION | Types of neurons. The brain. | By the end of the lesson, the learner should be able to:  Identify types of neurons.  Describe structure of the human brain. | Descriptive and expository approaches. | Illustrative diagrams. | KLB BK IV. PP 85-88 |  |
| 5 | RECEPTION, RESPONSE & CO-ORDINATION | Reflex actions. | By the end of the lesson, the learner should be able to:  Differentiate between simple and conditioned reflex actions. | Illustrate a simple reflex arc. Probing questions on differences between simple and conditioned reflex actions. | Illustrative diagrams. | KLB BK IV. PP 88-90 |  |
| 7 | **Mid Term Exam and Break** | | | | | | | |
| 8 | 1 | RECEPTION, RESPONSE & CO-ORDINATION | Transmission of a nerve impulse. | By the end of the lesson, the learner should be able to:  Describe the transmission of a nerve impulse. | Descriptive and expository approaches. | Illustrative diagrams. | KLB BK IV. PP 90-93 |  |
| 2 | RECEPTION, RESPONSE & CO-ORDINATION | Transmission of a nerve impulse. | By the end of the lesson, the learner should be able to:  Describe the transmission of a nerve impulse. | Descriptive and expository approaches. | Illustrative diagrams. | KLB BK IV. PP 90-93 |  |
| 3 | RECEPTION, RESPONSE & CO-ORDINATION | The endocrine system. | By the end of the lesson, the learner should be able to:  Identify components of endocrine system. Compare endocrine system. With nervous system. | Discussion; tabulate the differences. | Illustrative diagrams. | KLB BK IV. PP 93-6 |  |
| 4 | RECEPTION, RESPONSE & CO-ORDINATION | The mammalian eye. | By the end of the lesson, the learner should be able to:  Identify major parts of the human eye. Explain image formation and interpretation in the eye. | Brain storming; Discussion with probing questions. | Chart- the human eye. | KLB BK IV. PP 93-100 |  |
| 5 | RECEPTION, RESPONSE & CO-ORDINATION | The mammalian eye. | By the end of the lesson, the learner should be able to:  Identify major parts of the human eye. Explain image formation and interpretation in the eye. | Brain storming; Discussion with probing questions. | Chart- the human eye. | KLB BK IV. PP 93-100 |  |
| 9 | 1 | RECEPTION, RESPONSE & CO-ORDINATION | Accommodation of the eye. | By the end of the lesson, the learner should be able to:  Explain the role of ciliary muscles in accommodation of the eye. | Discussion with probing questions, Drawing illustrative diagrams. | Chart- focusing far and near points. | KLB BK IV. PP 100-1 |  |
| 2 | RECEPTION, RESPONSE & CO-ORDINATION | Accommodation of the eye. | By the end of the lesson, the learner should be able to:  Explain the role of ciliary muscles in accommodation of the eye. | Discussion with probing questions, Drawing illustrative diagrams. | Chart- focusing far and near points. | KLB BK IV. PP 100-1 |  |
| 3 | RECEPTION, RESPONSE & CO-ORDINATION | Accommodation of the eye. | By the end of the lesson, the learner should be able to:  Explain the role of ciliary muscles in accommodation of the eye. | Discussion with probing questions, Drawing illustrative diagrams. | Chart- focusing far and near points. | KLB BK IV. PP 100-1 |  |
| 4 | RECEPTION, RESPONSE & CO-ORDINATION | Defects of vision and their correction. | By the end of the lesson, the learner should be able to:  Identify defects of vision. Explain correction of vision defects. | Detailed discussion with probing questions; Drawing illustrative diagrams. | Illustrative diagrams. | KLB BK IV. PP 101-4 |  |
| 5 | RECEPTION, RESPONSE & CO-ORDINATION | The human ear. | By the end of the lesson, the learner should be able to:  Identify major parts of the human ear. | Descriptive and expository approaches. Drawn diagrams. | Illustrative diagrams. | KLB BK IV. PP 104-5 |  |
| 10 | 1 | RECEPTION, RESPONSE & CO-ORDINATION | Hearing. | By the end of the lesson, the learner should be able to:  Explain how the ear perceives sound. | Descriptive and expository approaches. | Illustrative diagrams. | KLB BK IV. P 106 |  |
| 2 | RECEPTION, RESPONSE & CO-ORDINATION | Body balance and posture. | By the end of the lesson, the learner should be able to:  Explain how the ear maintains body balance and posture. | Descriptive and expository approaches. |  | KLB BK IV. PP 107-8 |  |
| 3 | RECEPTION, RESPONSE & CO-ORDINATION | Body balance and posture. | By the end of the lesson, the learner should be able to:  Explain how the ear maintains body balance and posture. | Descriptive and expository approaches. |  | KLB BK IV. PP 107-8 |  |
| 4 | RECEPTION, RESPONSE & CO-ORDINATION | Defects of the ear. | By the end of the lesson, the learner should be able to:  Identify some defects of the ear. | Descriptive and expository approaches. | text book | KLB BK IV.  P 108 |  |
| 5 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | Importance of support and movement in plants. | By the end of the lesson, the learner should be able to:       Explain the importance of support and movement in plants. | Brain storming; Probing questions; Discussion. | text book | KLB BK IV. PP 111-2 |  |
| 11 | 1 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | Arrangement of tissues in a monocotyledonous stem. | By the end of the lesson, the learner should be able to:  Draw and label a transverse section of a monocotyledonous stem. | Examine transverse section of a monocotyledonous stem. | Monocotyledo-nous stem, eg. tradescantia, microscope, Razors. | KLB BK IV. PP111-2. |  |
| 2 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | Arrangement of tissues in a dicotyledonous stem. | By the end of the lesson, the learner should be able to:  Draw and label a transverse section of a dicotyledonous stem.  Draw and label a transverse section of herbaceous and woody stems. | Examine transverse section of a dicotyledonous stem, herbaceous and woody stems. | Herbaceous stem, microscope, slides, Razors. | KLB BK IV. PP 111-5 |  |
| 3 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | Arrangement of tissues in a dicotyledonous stem. | By the end of the lesson, the learner should be able to:  Draw and label a transverse section of a dicotyledonous stem.  Draw and label a transverse section of herbaceous and woody stems. | Examine transverse section of a dicotyledonous stem, herbaceous and woody stems. | Herbaceous stem, microscope, slides, Razors. | KLB BK IV. PP 111-5 |  |
| 4 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | Stem tissues. | By the end of the lesson, the learner should be able to:  Identify some stem tissues. Explain the role of stem tissues. | Drawing and labeling diagrams; Discussion. | Illustrative diagrams. | KLB BK IV. PP 113-5 |  |
| 5 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | Wilting in plants. | By the end of the lesson, the learner should be able to:  Compare the rate of wilting of herbaceous and woody stems.  Account for difference in rate of water loss. | Uproot herbaceous and woody plants; Observe tem for about 30 min; Brief discussion. |  | KLB BK IV. P 116 |  |
| 12 | 1 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | The exoskeleton. | By the end of the lesson, the learner should be able to:  Describe the structure of the exoskeleton. | Examine movement of a live arthropod; Observe muscles of the hind limb of a grasshopper; Relate the observations to the function of the exoskeleton. | A live arthropod, E.g. grasshopper, millipede. | KLB BK IV. PP 116-7 |  |
| 2 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | The exoskeleton. | By the end of the lesson, the learner should be able to:  Describe the structure of the exoskeleton. | Examine movement of a live arthropod; Observe muscles of the hind limb of a grasshopper; Relate the observations to the function of the exoskeleton. | A live arthropod, E.g. grasshopper, millipede. | KLB BK IV. PP 116-7 |  |
| 3 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | The exoskeleton. | By the end of the lesson, the learner should be able to:  Describe the structure of the exoskeleton. | Examine movement of a live arthropod; Observe muscles of the hind limb of a grasshopper; Relate the observations to the function of the exoskeleton. | A live arthropod, E.g. grasshopper, millipede. | KLB BK IV. PP 116-7 |  |
| 4 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | The endoskeleton. | By the end of the lesson, the learner should be able to:  Describe the structure of the endoskeleton. | Observe skeleton of a vertebrate; Compare it with an exoskeleton. Discuss the contrasting features. | The human skeleton. | KLB BK IV. PP 117-8 |  |
| 4-5 | SUPPORT & MOVEMENT IN PLANTS AND ANIMALS | The endoskeleton. | By the end of the lesson, the learner should be able to:  Describe the structure of the endoskeleton. | Observe skeleton of a vertebrate; Compare it with an exoskeleton. Discuss the contrasting features. | The human skeleton. | KLB BK IV. PP 117-8 |  |
| 13-14 | **End Term Exam and Closing** | | | | | | | |